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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/662,323	09/14/2000	Seiichi Matsui	0879-0277P	1512

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EXAMINER

JERABEK, KELLY L

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/662,323

Applicant(s)

MATSUI, SEIICHI

Examiner

Kelly L. Jerabek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

Figure 6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 and 13-15 rejected under 35 U.S.C. 102(e) as being anticipated by Yamaguchi et al. US 6,342,921.

Re claim 1, Yamaguchi discloses in figure 14 an image pickup device capable of both full frame operation and line thinning operation. It can be seen in figure 15A that pixel information of two adjoining lines of the array composes color information of three primary colors (R,G,B) (col. 13, lines 30-32). The image pickup device includes photosensors (2) for acquiring image signals and vertical transferring routes (3) for reading out image signals (col. 13, lines 32-44). The vertical transferring routes (3) include a matrix of transferring gates (21,22,23,31,32,33) associated with the individual photosensors (2) (col. 13, lines 44-52). Driving pulses ($\phi V1$, $\phi V2$, $\phi V2'$, $\phi V3$) are applied to the gates (21,22,23,31,32,33) via bus wirings (41,42,42',43) in order to transfer signals from the photosensors (2) according to either a full-frame operation or a line thinning operation (col. 13, line 48 – col. 15, line 4). During the line thinning operation only pixel information of certain photosensors (2) is readout and thus image signals with low definition are produced (fig. 16C; col. 14, line 46 – col. 15, line 4). The line thinning mode may be set so that only pixel information of pairs of two adjoining lines with intervals of a plurality of lines are transferred to the vertical transferring routes (3) thus reducing the number of output lines to half of the value (fig. 19, col. 16, lines 8-14).

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Re claim 2, Yamaguchi states that the image pickup device may operate in a full-frame mode to readout signals of all pixels from the photosensors (2) to the vertical transferring routes (3) (col. 14, lines 8-16).

Re claim 3, when the image pickup device operates in full-frame mode the signals are divided into a plurality of fields (R,G,B) corresponding to the order of the array of color filters (col. 14, lines 8-16).

Re claim 13, see claim 1.

Re claim 14, see claim 2.

Re claim 15, see claim 3.

Claims 1-3 and 13-15 rejected under 35 U.S.C. 102(e) as being anticipated by Misawa US 6,700,607.

Re claim 1, Misawa discloses in figure 1 an image pickup device (10) capable of operating in a normal image-capturing mode and a macro image-capturing mode. It can be seen in figure 1 that pixel information of two adjoining lines of the array composes color information of three primary colors (R,G,B) (col. 4, lines 1-23). The image pickup

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device includes photoelectric elements (12) for acquiring image signals and vertical transferring routes (14) for reading out image signals (col. 4, lines 1-23). The vertical transferring routes (14) include a matrix of transferring gates associated with the individual photoelectric elements (12) (col. 4, lines 24-31). Read gate pulses are applied to the gates in order to transfer signals from the photoelectric elements (12) (col. 4, lines 24-47). Figure 2a shows an example where only pixel information of certain photoelectric elements (12) is readout and thus image signals with low definition are produced (col. 4, line 52 – col. 5, line 3). Figure 2b shows a method where two horizontal lines are read and the next two horizontal lines are skipped (col. 5, lines 4-7). Therefore, only pixel information of pairs of two adjoining lines with intervals of a plurality of lines are transferred to the vertical transferring routes.

Re claim 2, Misawa states that in the macro image-capturing mode the solid state imaging device (28) is driven by reading out all of the photoelectric elements (12) in order to obtain an image with a higher quality than in the normal image-capturing mode (col. 8, lines 28-44).

Re claim 3, It can be seen in figure 1 that pixel information of two adjoining lines of the array composes color information of three primary colors (R,G,B) (col. 4, lines 1-23). Therefore, when the image pickup device operates macro image-capturing mode the signals are divided into a plurality of fields (R,G,B) corresponding to the order of the array of color filters.

Re claim 13, see claim 1.

Re claim 14, see claim 2.

Re claim 15, see claim 3.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-7, 9-12, 16-19, and 21-24 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. in view of Harada et al. US 6,108,036.

Re claim 4, Yamaguchi discloses a solid imaging device according to claim 1 above. Yamaguchi also discloses a lens system (100) that forms a subject image on the CCD (101) (col. 5, lines 28-43). The image pickup device disclosed by Yamaguchi also includes a timing controller (107) for generating driving pulses for transferring pixel

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information according to the functions described in claim 1 above. However, Yamaguchi does not disclose a signal processing device that produces pixel information of one line from the pixel information of each pair of two adjoining lines when image signals of low definition are produced.

Harada discloses in figure 1 an imaging apparatus (1) including a solid imaging device (14-16) and an optical system (3). The imaging apparatus (1) disclosed by Harada includes a signal processing device (72) that produces image signals by producing pixel information of one line from the pixel information of a pair of two adjoining lines read from the solid imaging device (fig. 9; col. 34, lines 23-41). Therefore, it would have been obvious for one skilled in the art to have been motivated to include the signal processing device capable of producing image signals by producing pixel information of one line from the pixel information of a pair of adjoining lines as disclosed by Harada in the image pickup device capable of performing a line thinning operation as disclosed by Yamaguchi. Doing so would provide a means for adding signals outputted from two adjacent light-receiving regions to generate a single output in each field (Harada: col. 34, lines 20-27).

Re claim 5, Yamaguchi states that the image pickup device may operate in a full-frame mode to readout signals of all pixels from the photosensors (2) to the vertical transferring routes (3) (col. 14, lines 8-16).

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Re claim 6, when the image pickup device operates in full-frame mode the signals are divided into a plurality of fields (R,G,B) corresponding to the order of the array of color filters (col. 14, lines 8-16).

Re claim 7, the signal processing device (72) disclosed by Harada reduces pixel information of horizontal lines by producing pixel information of one line from the pixel information of pairs of adjoining lines by a process called interlacing (col. 34, lines 23-42; fig. 9).

Re claim 9, the image pickup device disclosed by Yamaguchi includes a liquid crystal display (135) for displaying color images read out according to either the full frame mode or the line-thinning mode (col. 8, lines 57-67).

Re claim 10, the image pickup device disclosed by Yamaguchi includes memory (143) that records the image signals produced by the image pickup device (col. 8, line 57 – col. 9, line 6).

Re claim 11, see claim 5.

Re claim 12, see claim 6.

Re claim 16, see claim 4.

Re claim 17, see claim 5.

Re claim 18, see claim 6.

Re claim 19, see claim 7.

Re claim 21, see claim 9.

Re claim 22, see claim 10.

Re claim 23, see claim 5.

Re claim 24, see claim 6.

Claims 8 and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. in view of Harada et al. and further in view of Dischert US 6,040,869.

Re claim 8, Yamaguchi in view of Harada discloses all of the limitations according to claim 4. In addition, the signal processing device (72) disclosed by Harada outputs the interlaced signals (col. 34, lines 20-23). However, Harada does not state

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that the signal processing device (72) has an interpolation operation device that interpolates the interlaced signals.

Dischert discloses in figure 1A video signal processing circuitry. The circuitry serves to interpolate interlaced lines (fig. 2D; col. 5, lines 57-65). Therefore, it would have been obvious to include the video signal processing circuitry as disclosed by Dischert in the solid imaging device disclosed by Yamaguchi in view of Harada. Doing so would provide a means for interpolating the interlaced signals with the low definition to produce modified image signals (Dischert: col. 5, lines 57-65).

Re claim 20, see claim 8.

Contacts

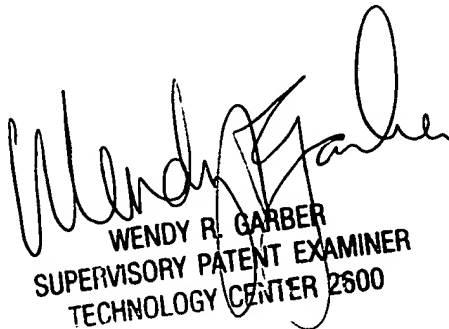
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly L. Jerabek whose telephone number is **(571) 272-7312**. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on **(571) 272-7308**. The fax phone number for submitting all Official communications is 703-872-9306. The fax phone number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at **(571) 273-7312**.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KLJ


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